AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) An air conditioner comprising:

a plurality of compressors for compressing a refrigerant;

a condenser for condensing the refrigerant;

an electronic expansion valve for expanding the refrigerant;

an evaporator for evaporating the refrigerant;

a direction ~~change~~ changing valve for changing ~~the~~ a flow direction of the refrigerant;

a refrigerant ~~pipe~~ conduit for connecting the plurality of compressors, the condenser, the electronic expansion valve, the evaporator and the direction ~~change~~ changing valve; ~~and~~

a first temperature sensor, installed at inlets of the compressors, for measuring a temperature of the refrigerant drawn into the compressors;

a second temperature sensor, installed at the evaporator, for measuring a temperature of the refrigerant passing through the evaporator;

a third temperature sensor, installed outdoors, for measuring an outdoor temperature; and

a microcomputer for controlling ~~the~~ operation of the air conditioner,

wherein the microcomputer controls an opening degree of the electronic expansion valve so that a current degree of superheat coincides with a target degree of

superheat set according to the refrigerant compression capacity of at least one operating ~~compressor(s)~~ compressor and an outdoor temperature ~~in case that one or more compressors are~~ when at least one compressor is operated so that the refrigerant compression capacity is ~~variably changed~~ varied in accordance with a one of a cooling load and a ~~or~~ heating load,

wherein the microcomputer sets a difference between the temperature of the refrigerant at the inlets of the compressors measured by the first temperature sensor and the temperature of the refrigerant at the evaporator measured by the second temperature sensor as a current degree of superheat, and sets the target degree of superheat according to the refrigerant compression capacity of the at least one operating compressor and the outdoor temperature measured by the third temperature sensor.

2. (Canceled)

3. (Currently Amended) The air conditioner as set forth in claim [[2]] 1,

wherein the plural compressors ~~includes~~ include at least first and second compressors having different refrigerant compression capacities.

4. (Original) The air conditioner as set forth in claim 3,

wherein the refrigerant compression capacity of the first compressor is larger than that of the second compressor.

5. (Currently Amended) The air conditioner as set forth in claim 4,

wherein both of the first and second compressors are concurrently operated, or only one of the first and second compressors is selectively operated, according to one of the cooling load and ~~or~~ heating load.

6. (Currently Amended) The air conditioner as set forth in claim 5,

wherein the microcomputer includes tables storing the target degrees of superheat in accordance with ~~the~~ a variation in the refrigerant compression capacity of the at least one operating ~~compressor(s)~~ compressor and the outdoor temperature.

7. (Currently Amended) A method for controlling an electronic expansion valve of an air conditioner comprising ~~the steps of~~:

~~(a)~~ operating at least one ~~or more~~ of a plurality of compressors so that ~~the~~ a refrigerant compression capacity of the at least one operating ~~compressor(s)~~ compressor is ~~variably changed~~ varied according to a cooling/heating load;

~~(b)~~ calculating a current degree of superheat and ~~simultaneously~~ setting a target degree of superheat in accordance with the refrigerant compression capacity of the at least one operating ~~compressor(s)~~ compressor and an outdoor temperature ~~in case that one or more~~ when at least one of the plural compressors ~~are~~ is operated ~~at the step (a)~~; and

~~(c)~~ controlling an opening degree of the electronic expansion valve so that the current degree of superheat calculated ~~at the step (b)~~ coincides with the target degree of superheat,

wherein the operating comprises determining whether a first compressor, having a refrigerant compression capacity of X% of the total refrigerant compression capacity, and a second compressor, having a refrigerant compression capacity of (100-X)% of the total refrigerant compression capacity, are concurrently or selectively operated.

8. (Canceled)

9. (Currently Amended) The method as set forth in claim [[8]] 7,

wherein the ~~step (a)~~ operating further includes ~~the step of~~ operating the first and second compressors ~~simultaneously~~ concurrently according to one of the cooling ~~or~~ load and the heating load, or ~~the step of~~ selectively operating only one of the first and second compressors ~~selectively~~, according to one of the cooling ~~or~~ load and the heating load.

10. (Currently Amended) The method as set forth in claim 7,

wherein the calculating comprises calculating the current degree of superheat ~~at the step (b) is calculated from~~ based upon a difference between a temperature of the refrigerant at inlets of the at least one operating ~~compressor(s)~~ compressor and a temperature of the refrigerant at an evaporator.

11. (Currently Amended) The method as set forth in claim 7,

wherein the calculated target degree of superheat ~~set at the step (b) in case that~~ when the first and second compressors are ~~simultaneously~~ concurrently operated in one of a cooling ~~or~~ mode and a heating mode ~~at the step (a)~~ is set to be larger than the target degree of superheat set ~~at the step (b) in case that~~ when one of the first and second compressors is selectively operated in one of the cooling ~~or~~ mode and the heating mode ~~at the step (a)~~.

12. (Currently Amended) The method as set forth in claim 11,

wherein the calculated target degree of superheat ~~set at the step (b) in case that~~ when the outdoor temperature is not more than a first designated temperature in a cooling mode ~~at the step (a)~~ of operation is set to be smaller than the target degree of superheat

set ~~at the step (b) in case that~~ when the outdoor temperature is more than the first designated temperature in the cooling mode ~~at the step (a)~~ of operation.

13. (Currently Amended) The method as set forth in claim 12,

wherein the calculated target degree of superheat ~~at the step (b)~~ is set to -2° ~~in case that~~ when the first and second compressors are ~~simultaneously~~ concurrently operated in the cooling mode and the outdoor temperature is not more than 40°C ~~at the step (a)~~, and is set to -3°C ~~in case that~~ when the first and second compressors are ~~simultaneously~~ concurrently operated in the cooling mode and the outdoor temperature is more than 40°C ~~at the step (a)~~.

14. (Currently Amended) The method as set forth in claim 13,

wherein the calculated target degree of superheat ~~at the step (b)~~ is set to 0°C ~~in case that~~ when only one of the first and second compressors is selectively operated in the cooling mode and the outdoor temperature is not more than 40°C ~~at the step (a)~~, and is set to -1°C ~~in case that~~ when only one of the first and second compressors is selectively operated in the cooling mode and the outdoor temperature is more than 40°c ~~at the step (a)~~.

15. (Currently Amended) The method as set forth in claim 11,

wherein the calculated target degree of superheat ~~set at the step (b) in case that~~ when the outdoor temperature is not more than a ~~second designated~~ first predetermined temperature in a heating mode ~~at the step (a)~~ of operation is set to be smaller than the target degree of superheat set ~~at the step (b) in case that~~ when the outdoor temperature is

more than the ~~second designated~~ first predetermined temperature in the heating mode ~~at the step (a)~~ of operation.

16. (Currently Amended) The method as set forth in claim 15,

wherein the ~~step (b)~~ calculating further includes ~~the step of~~ ~~simultaneously~~ concurrently operating both of the first and second compressors ~~in case that~~ when the outdoor temperature in the heating mode ~~at the step (a)~~ of operation is not more than a ~~third designated~~ second predetermined temperature lower than the ~~second designated~~ first predetermined temperature.

17. (Currently Amended) The method as set forth in claim 16,

wherein the calculated target degree of superheat ~~at the step (b)~~ is set to -1°C ~~in case that~~ when the first and second compressors are ~~simultaneously~~ concurrently operated in the heating mode of operation and the outdoor temperature is not more than -4°C ~~at the step (a)~~, is set to -2°C ~~in case that~~ when the first and second compressors are ~~simultaneously~~ concurrently operated in the heating mode of operation and the outdoor temperature is more than -4°C and not more than 20°C ~~at the step (a)~~, and is set to -3°C ~~in case that~~ when the first and second compressors are simultaneously operated in the heating mode of operation and the outdoor temperature is more than 20°C ~~at the step (a)~~.

18. (Currently Amended) The method as set forth in claim 17,

wherein the calculated target degree of superheat ~~at the step (b)~~ is set to 0°C ~~in case that only~~ when one of the first and second compressors is selectively operated in the heating mode and the outdoor temperature is not more than 20°C ~~at the step (a)~~, and is set to -1°C ~~in case that only~~ when one of the first and second compressors is selectively

operated in the heating mode and the outdoor temperature is more than 20°C ~~at the step (a)~~.

19. (New) A method for controlling an electronic expansion valve of an air conditioner comprising:

operating at least one of a plurality of compressors so that the refrigerant compression capacity of the at least one operating compressor is changed according to a cooling/heating load;

calculating a current degree of superheat and setting a target degree of superheat in accordance with the refrigerant compression capacity of the at least one operating compressor and an outdoor temperature when at least one of the plural compressors is operated; and

controlling an opening degree of the electronic expansion valve so that the current degree of superheat calculated coincides with the target degree of superheat,

wherein the calculated target degree of superheat when the first and second compressors are concurrently operated in one of a cooling mode and a heating mode is set to be larger than the target degree of superheat set when one of the first and second compressors is selectively operated in one of the cooling mode and the heating mode.

20. (New) The method as set forth in claim 19,

wherein the calculated target degree of superheat when the outdoor temperature is not more than a first designated temperature in a cooling mode of operation is set to be smaller than the target degree of superheat set when the outdoor temperature is more than the first designated temperature in the cooling mode of operation.